

国产凤丫蕨属的新分类群*

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NEW TAXA OF THE GENUS CONIOGRAMME FÉE FROM CHINA

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提 要

本文是过去十多年来对凤丫蕨属研究的总结。提出了一个分类系统、23个新种和4个新变种的拉丁描述。

ABSTRACT

The present paper is a summary account of last ten or so years' work on the genus *Coniogramme* Fée, herein are presented a new classification scheme and diagnoses for 23 new taxa in China.

凤丫蕨属 (*Coniogramme*) 自法国蕨类学家 Fée(1850-52) 建立以后, 德国 Hieronymus 在 1916 年进行了专题研究, 承认了 17 个种, 去年印度 Dixit 和 Das 研究了印度的种类, 发表 1 新种, 1 新组合。

本属主产我国长江以南和东南亚热带温凉山地, 东到我国东北、朝鲜、日本、菲律宾, 南到印度支那、马来亚、印度尼西亚; 墨西哥和非洲各有一二种。由于它体态比较一致, 而种群之间的某些性状变化甚大, 形态分类比较困难, 长期以来, 缺乏全面研究。近十年来, 作者在编写中国植物志第三卷裸子蕨科过程中, 整理了大量标本, 并对个别种进行了野外观察, 根据叶边有无锯齿, 毛的有无及类型, 叶脉分离或网结以及叶脉顶端水囊的位置等特征, 将本属分为 2 个组, 39 种。现将其系统及新种预报如下。

分 类 系 统

1. 离脉组 Sect. *Coniogramme* 叶脉分离。可分为 2 个系:

1. 全缘系 Ser. *Integrifoliae* Ching 叶片通常为一回羽状, 有时基部一对羽片二叉

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或近羽状，羽片或小羽片全缘。

6种，分布于亚洲热带，中国均产。

2.有齿系 *Serratae* Ching 叶片大多为二回羽状，少有一回羽状或三回羽状，小羽片边缘有锯齿。

约29种，广布亚洲，个别种达墨西哥及非洲；中国最多，计26种。

2.网脉组 *Sect. Notogramme* (Presl) Ching 叶脉沿主脉两侧形成1—3行斜出的长网眼，有时仅具一、二个不连续的网眼。

6种，主产我国东部和中南部，1种达朝鲜和日本。

Conspectus Generis Coniogramme Fée

Sect. I. Coniogramme Venis utroque costae latere liberis.

Sectionis typus: *Coniogramme fraxinea* (Don) Diels

Ser. 1. Integrifoliae Ching, ser. nov. Frondibus simpliciter pinnatis vel rarissime basi subbipinnatis, pinnis plerumque magnis, oblongis, margine integerrimis.

Seriei typus *Coniogramme fraxinea* (Don) Diels

Ser. 2. Serratae Ching, ser. nov. Frondibus basi plerumque bipinnatis vel subbipinnatis, rarissime pinnis basalibus furcatis aut simplicibus, pinnis aut pinnulis plerumque lanceolatis, margine regulariter serratis aut dentatis vel raro crenatis.

Seriei typus: *Coniogramme serra* Fée

Sect. II. Notogramme (Presl) Ching, sect. nov. — *Notogramme* Presl, Epim. Bot. (1849) 263. — *Dyctiogramme* Presl, op. cit., pro genere. Venis utroque costa latere 1–3 series areolarum obliquarum formantibus.

Sectionis typus: *Coniogramme japonica* (Thunb.) Diels

披针凤丫蕨 新种

Coniogramme lanceolata Ching, sp. nov.

Species e grege *C. fraxineae* (Don) Diels, a qua differt minore, pinnis lateralibus magis minoribus, lanceolatis, versus apicem acuminatis, haud caudatis, subtus sparse puberulis.

Tota planta 70–90 cm alta; rhizomate repente, crasso, paleis brunneis, longe lanceolatis passim onusto; fronde stipite laminam longitudine subaequante, 3–4 mm diametro, pallide stramineo, glabro, nitidoque suffulta, lamina oblonga, ca. 50 cm longa, 30–40 cm lata, simpliciter pinnata cum pinna terminali impari; pinnis lateralibus 3–6-jugis, suboppositis, obliquis, 5–6 cm inter se remotis, simplicibus (vel interdum pinnis basalibus bipartitis), inferioribus petiolatis (petiolo 1–1.5 cm longo), superioribus fere sessilibus, omnibus similibus, ad 20 cm longis, 4–4.5 cm medio latis, oblongo-lanceo-

latis, acuminatis, basin versus cuneatis, margine integerrimis et anguste revolutis, pinna terminali inferioribus parum majore, longe petiolata (petiolulo 2.5–3 cm longo); nervis prominulis, obliquis, basi vel parum supra basin 2–3-furcatis, venulis parallelis, in hydathodas clavatas pallidas terminantibus, marginem non attingentibus; pagina frondis firmiter chartacea, in sicco glauco-viridi, subtus perparce puberula, supra glaberrima; soris tenuibus, linearibus, e costa ad $2/3$ latitudinis pinnarum protensis.

Yunnan occid. on the way from Long-Ling to Teng-Chong, alt. 1400 m, R.C.Ching (秦仁昌) 50431 (typus)* under evergreen forest, 24, XI, 1952.

本新种产云南西部边界(龙陵到腾冲), 近于 *C. fraxineae* (Don) Diels, 但形体较小, 侧生羽片远较小, 披针形, 顶部渐尖, 从不呈尾状, 下面被疏毛故易区别。

紫杆凤丫蕨 新种

Coniogramme rubicaulis Ching, sp. nov.

Ex affinitate *C. fraxineae* (Don) Diels, a qua differt fronde ampliore, ovato-delloidea, bipinnata, stipite rachique purpureis.

Tota planta usque 1.5 m alta; stipite 60–70 cm longo, ut rachi atropurpureo, basi ca. 1 cm crasso, paleis atro-brunneis, lanceolatis, aspero, sursum glabro laevique; lamina 80–90 cm longa, ca. 40 cm lata, deltoideo-ovata, infra medium bipinnata, sursum imparipinnata; pinnis 8–10 utroque racheos latere, inferioribus 3–4-jugis pinnatis, ca. 10 cm inter se remotis, subalternis, petiolatis, superioribus simplicibus, ca. 7 cm remotis, breviter petiolatis vel supremis sessilibus, pinnis inferioribus 2-jugis maximis, ca. 30 cm longis, 12–15 cm latis, petiolo 3–3.5 cm longo stipitatis, imparipinnatis; pinnulis lateralibus ca. 4–5-jugis, suboppositis vel oppositis, ca. 4 cm inter se remotis, basalibus majoribus, 8–10 cm longis, 3.5 cm latis, ovato-oblongis, apice caudato-acuminatis, basi late subrotundatis, sessilibus, latere inferiore leviter adnatis, pinnula terminali majore, 15–20 cm longa, basi 4 cm lata, oblongo-lanceolata, petiolulo ca. 2 cm longo stipitata; pinnis sequentibus 2-jugis ternatis vel bipartitis, petiolo 1.5 cm longo suffultis, pinnulis iis pinnarum inferiorum similibus, pinnula terminali majore et longius petiolulata excepta; pinnis ceteris superioribus conformibus sed supremis minoribus, pinna terminali simili sed majore, petiolata; marginibus ubique integris; nervis 1–2-furcatis, utrinque distinctis, obliquis, apice rectis, marginem non attingentibus, in hydathodas ovato-clavatas supra prominentes terminantibus; pagina frondis tenuiter herbacea, in statu sicco obscurius viridi, utrinque glabra; rachillis pinnarum inferi-

* All types cited in the present paper are conserved in Herb. Bot. Inst., Academia Sinica,

orum subtus rubicundis, supra stramineis, glabris, soris tenuibus, remote separatis, e costa usque ad 3-4 mm a margine extensis. Guangxi (Kwangsi) bor.: Luo-Cheng, Jiu-Wan Shan, 15 km. south of Shan-Fang, R. C. Ching (秦仁昌) 5809 (typus), in deep ravine under forest, alt. 750 m, 8, VI, 1929.

本新种产广西罗城(九万山), 形体略似全缘凤丫蕨 *C. fraxinea* (Don) Diels, 但叶片为充分二回羽状, 较宽大, 卵状三角形, 叶柄和叶轴紫色, 故易区别。

大凤丫蕨 新种

Coniogramme gigantea Ching, sp. nov.

Ex affinitate *C. rubicaulis* Ching, a qua differt stipite rachique stramineis, pinnulis apice cuspidatis.

Tota planta usque ad 2.5 m alta; stipite ca. 1 m longo, 1 cm diametro, basi nigro, lignoso, paleis atro-brunneis, lanceolatis sparse vestito, sursum stramineo, nitente, laevi, infra tereti, supra bisulcato, lamina ampla, ad 1.5 m longa, 40-50 cm lata, deltoidea, bipinnata; pinnis lateralibus ca. 12-jugis, inferioribus 4-jugis pinnatis, ca. 15-18 cm inter se remotis, basalibus maximis, ca. 55 cm longis, 25 cm latis, oblongis, oppositis, petiolo 5 cm longo stipitatis, impari-pinnatis; pinnulis ca. 8 utroque rachillae latere, alternis, patentibus, 7 cm inter se remotis, lanceolatis, 12-15 cm longis, ca. 3 cm latis, apice breviter caudato-acuminatis (cauda ca. 1 cm longa), basi subaequilateraliter rotundatis, inferioribus sessilibus, superioribus basi parum adnatis, pinnula terminali simili sed multo majore; pinnis mediis ambitu elongato-deltoideis, petiolo 1-1.5 cm longo suffultis, ternatis vel interdum basi latere postico uniauriculatis, pinnulis duabus lateralibus 8-10 cm longis, 2.5 cm latis, sessilibus vel parum adnatis, pinnula terminali multo majore, 20-25 cm longa, ca. 4 cm lata, lanceolata, apice in caudam ca. 1 cm longam integram subito contracta; pinnis supra medium laminae ca. 8-jugis simplicibus, alternis, ca. 7 cm inter se remotis, ca. 18 cm longis, 3.5-3 cm latis, late lanceolatis, apice breve caudatis, basi rotundo-truncatis, sessilibus, inferioribus parum, supremis late ad rachim adnatis, pinna terminali majore; marginibus omnino integerrimis, nervis liberis, distinctis, 1-2-furcatis, nervulis parallelis, obliquis, apice rectis, in hydathodas clavatas, prominentes, supra pallidas terminantibus, marginem non attingentibus; pagina frondis tenuiter herbacea, in statu sicco obscurius viridi, utrinque glaberrima, soris tenuibus, separatis, usque ad 3-4 mm a margine protensis.

Yunnan austr.-orient.: Ping-Bian, Da-wei Shan, A-Da-Kou, Yunnan Complex Expedition 3592 (typus), in open forest, alt. 1100-1300 m, 17, VI, 1956.

本新种产云南屏边（大围山），近于前种，但叶柄和叶轴为禾秆色，小羽片顶端尾状，故易区别。

假黑轴凤丫蕨 新种

Coniogramme pseudorobusta Ching et shing sp. nov.

Affinis *C. robustae* Christ, differt pinnis majoribus, oblongo-lanceolatis, ad 22 cm longis, 5 cm latis, apice abrupte caudatis, longe petiolatis.

Tota planta usque ad 80 cm alta; stipite ca. 42 cm longo, 3 mm diametro, sordide castaneo, glabro; lamina subovata, ad 40 cm longa, impari-pinnata; pinnis lateralibus 4-jugis, suboppositis, oblique patentibus petiolatis, inferioribus ca. 7 cm inter se remotis, basalibus ad 22 cm longis, 5-5.5 cm latis, oblongo-lanceolatis, apice abrupte caudatis (cauda 1 cm longa), basi rotundis, petiolo 1.5 cm longo suffultis, margine obscure dentatis, pinnis sequentibus ambitu similibus, pinna terminali paulo majore, basi rotunda, petiolo 2.5 cm longo suffulta; venis supra obscuris, subtus distinctis, bifurcatis, apice rectis, a margine pinnarum remotis et in hydathodas crasse clavatas terminantibus; pagina frondis firme chartacea, in sicco obscure viridi, glabra, rachi sordide brunnea, costa subtus atrocastanea, lucida; soris anguste linearibus, sese separatis, e costa ad marginem pinnarum extensis.

Guizhou (Kweichow): Yin-Jiang-Kou, C. P. Tsien et al. (简焯坡等) 32577 (typus), under forest, alt. 920 m, 30, X, 1963. Hunan: Wu-Gang, Yun-Shan, L.H. Lu et K.C. Ho (刘林翰等) 16337, under forest in ravine, alt. 900 m, 19, X, 1963.

本新种产贵州印江和湖南武岗，近黑轴凤丫蕨 *C. robusta* Christ 但羽片较大，长圆披针形，长达22厘米，宽5厘米，顶端急尾头，并且长柄，故易区别。

澜沧凤丫蕨 新种

Coniogramme lancangensis Ching et shing, sp. nov.

Species *C. lanceolatae* Ching proxima, differt lamina fenuite herbacea, bipinnata, stipite brunneo-maculato; pinnis pinnulisque medio latioribus, marginibus undulatis remote crenulatisque.

Tota planta ultra 1 m alta; stipite 60-75 cm longo, ca. 5 mm crasso, stramineo, brunneo-maculato, sursum stramineo gladroque; lamina 55-70 cm longa, 22-36 cm lata, late ovato-lanceolata, bipinnata; pinnis 5-7 utroque racheos latere, obliquis, inferioribus 2-3-jugis pinnatis, ca. 11 cm inter se remotis, alternis vel suboppositis, basalibus maximis, 30-35 cm longis, 20 cm latis, oblongis; pinnulis lateralibus 2-4-jugis, suboppositis, breviter (2-3mm) petiolulatis vel supremis adnatis, 14 cm longis, 3-3.5 cm medio latis, subob-

lanceolatis, apice abrupte caudatis (cauda ca. 2.4 cm longa), basin versus cuneatis, pinnula terminali majore, 20 cm longa, 4.5 cm medio lata, basi subaequali, breviter deccurente, pinnis sequentibus 1-2-jugis, pinnatis vel ternatis, pinnulis iis pinnarum infimarum similibus, pinnis ceteris simplicibus, inferioribus 20 cm longis, 4-5 cm latis, oblanceolatis, basi cuneatis, petiolo 5 mm longo stipitatis, supremis minoribus, sessilibus vel plus minusve adnatis, pinna terminali majore, basi cuneata, petiolo 1.2 cm longo suffulta vel interdum basi latere inferiore unam pinnam adnatam gerente, marginibus undulatis, remote crenulatisque, nervis bis furcatis, infra prominulis, apice rectis, bases dentium non attingentibus, in hydathodas clavatas supra prominentes terminantibus, pagina frondis herbacea, in sicco pallide viridi, subtus sparse puberula, soris e costa usque ad partem tertiam latitudinis pinnae extensis.

Yunnan austro-occid. Lan-Cang, C. W. Wang (王启无) 76740 (typus), under forest, alt. 1300 m, V, 1936.

本新种产云南西南部澜沧, 形体略似披针凤丫蕨 *C. lanceolata* Ching, 但叶片薄草质, 二回羽状, 叶柄饰有紫色, 羽片通常基部以上最宽, 边缘有明显疏矮齿。

美丽凤丫蕨 新种

Coniogramme venusta Ching, sp. nov.

Species *C. rosthorni* Hieron. affinis, sed superne costis aut costulis laevibus, pinnis subtus glabris, hydathodis fusiformis, usque ad bases dentium agredientibus differt.

Tota planta 0.7-1.2 m alta, stipite ca. 30-50 cm longo, 1.5-3 mm crasso, pallide stramineo glabroque, lamina ca. 45-65 cm longa, ca 25 cm lata, deltoideo-oblonga, parte inferiore bipinnata, sursum simplici, pinnis 6-7 utroque racheos latere, alternis, obliquis, inferioribus 2-jugis pinnatis, ca. 15 cm inter se remotis, basalibus maximis, 30 cm longis, 14 cm latis, ovato-deltoides, petiolo 3 cm longo stipitatis, pinnulis 2-3-jugis 18 cm longis, 2.5 cm latis eximie falcato-lanceolatis, basi subrotundo-cuneatis, breviter (2 mm) petiolulatis, apice caudato-acuminatis, pinnula terminali majore, 24 cm longa, 3 cm lata, petiolulo 2.5 cm longo stipitata, pinnis sequentibus ternatis cum pinnulis iis pinnarum infimarum similibus, pinnis ceteris superioribus simplicibus, inferioribus 7 cm inter se remotis, 24 cm longis, 3 cm latis, eximie falcato-lanceolatis, basi subrotundo-cuneatis, petiolulo 6 mm longo stipitatis, apice longe caudato-acuminatis (cauda ca. 3 cm longa, lineari), pinnis superioribus parum brevioribus, breviter petiolatis, supremis 16 cm longis, 2.2 cm latis, egregie falcatis, subsessilibus, pinna terminali majore, 20 cm longa, 3.2 cm lata, basi cuneato-decurrente et saepe latere inferiore unam pinnam

minorem parum adnatam gerente; marginibus e basi ubique serrulatis, dentibus parvis, deltoideis, obtusis, obliquis, remotisque; nervis utrinque indistinctis, 1-2-furcatis, apice rectis, usque ad bases dentium egredientibus, in hydathodas fusiformes terminantibus; pagina frondis herbacea, in sicco utrinque atroviridi et glabra; soris sat densis, e costa usque ad $3/4$ latitudinis pinnarum protensis.

Yunnan austr. Jing-Dong, Pin-Pu, M. K. Li (李鸣岗) 2876 (typus), under mixed forest, alt. 2200 m, 9, II, 1940; Xin-Ping, W.M. Chu (朱维明) 351, in ravine under oak forest, alt. 1900 m, 27, I, 1957; Song-Bai, Ai-Lao Shan, W.M. Chu 4603, in ravine by stream under forest, alt. 1600 m.

本新种产云南景东、新平, 略近普通凤丫蕨 *C. intermedia* Hieron., 但羽片向基部多少变狭, 略向上弯弓, 侧脉顶端的水囊纺锤形, 伸达锯齿基部, 也象乳头凤丫蕨 *C. rosthorni* Hieron., 但叶片两面无毛。

峨眉凤丫蕨 新种

Coniogramme emeiensis Ching et Shing, sp. nov.

Species *C. intermediae* Hieron. proxime affinis, sed pinnis minoribus, basin versus angustatis, cuneatis, dentibus breviter deltoideis, obtusiusculis prorsus exsertis, hydathodis saepe usque ad bases dentium protensis differt.

Tota planta usque 1 m alta; rhizomate repente, 5 mm crasso, lignoso, paleis brunneis, lanceolatis, parce onusto; stipite 40-60 cm longo, ad 5 mm basi crasso, virescente stramineo vel saepe sparse brunneo-maculato, glabro laevique; lamina 30-50 cm longa, 20-28 cm lata, late ovato-oblonga, bipinnata cum pinna terminali impari; pinnis 7-10 utroque racheos latere, oppositis vel supremis suboppositis, obliquis, basalibus maximis, 12-25 cm longis, ca. 10 cm latis, subovatis, petiolo 1-2 cm longo suffultis, impari-pinnatis; pinnulis lateralibus 1-2-jugis, oppositis, ad 9 cm longis, ca. 1.7 cm latis, lanceolatis, caudato-acuminatis (cauda 1.5-2 cm longa) basin versus angustatis, cuneatis, breviter petiolulatis vel parum adnatis, pinnula terminali majore, 12-20 cm longa, 2.5-3 cm lata, basi breviter decurrente et saepe unam pinnam lateralem parum adnatam gerente; pinnis sequentibus 1-2-jugis minoribus, basalibus ca. 9 cm remotis, longe petiolatis, ternatis aut bipartitis, pinnulis iis pinnarum infimarum similibus; pinnis ceteris superioribus semper simplicibus, 4-5 cm inter se remotis, inferioribus ad 14 cm longis, 2 cm latis, lanceolatis, apice attenuato-acuminatis, basi cuneatis, petiolatis (petiolo 5 mm longo), sequentibus sensim abbreviatis, supremis ca. 7-9 cm longis, 1.2-1.4 cm latis, sessilibus vel basi leviter adnatis; pinna terminali majore et petiolata (petiolo ca. 1 cm longo); marginibus serratis, dentibus breviter deltoideis, obtusiusculis vel prorsus exsertis; nervis utrinque prominulis, 1-2-furcatis, ad apicem parum

incurvatis, usque ad bases dentium protensis et in hydathodas elongatas parum incrassatas terminantibus; pagina frondis herbacea, in sicco pallide viridi, utroque glabra; rachi pallide straminea; soris tenuibus, e costa usque ad partem tertiam latitudinis pinnarum extensis.

Sichuan (Szechuan): Emei Shan, R.C.Ching (秦仁昌) 125 (typus); S.C. Chen (郑学经) 30015; K.H. Shing et al. (邢公侠, 郎措永) 1279, 908, 943, 1944, 880, 1319, 913A, 906, 977, 882, 1069, under forest, VIII, 1963, 39, 40, 41, VII 1976; ibidem, T.T.Yu (俞德浚) 451, 20, IV, 1932; K.C. Kuan et T.N. Li (关克俭等) 2487, 2, XI, 1964; W.P. Fang (方文培) 17704, 14, IX, 1941; Chang-Lin, Szechuan Econ.Bot.Exped. 536, in ravine, 18, V, 1959.

本新种产四川峨眉山, 常见, 形体颇似普通凤丫蕨 *C.intermedia* Hieron. 但羽片较狭小, 向基部变狭、楔形, 锯齿为向前伏贴的浅缺刻状或波状, 水囊仅达锯齿基部或有时略伸入。

柳羽凤丫蕨 新变种

var. *Salicifolia* Ching et Shing, var. nov.

A typo speciei differt pinnis aut pinnulis longissimis, usque 24 cm longis, ca. 2 cm latis, anguste lineari-elongatis.

Sichuan (Szechuan): Emei Shan, K. H. Shing et al. (邢公侠, 郎措永) 1075 (typus), under forest, alt. 1050 m, 31, VII, 1963.

本新变种产四川峨眉山, 不同于原变种之点在于单羽片或小羽片, 狭线形, 长达24厘米, 宽约2厘米。

圆基凤丫蕨 新变种

var. *lancipinna* Ching et Shing, var. nov.

A typo speciei differt pinnis pinnulisque ovato-lanceolatis, basin versus non angustatis sed latioribus, apice acuminatis.

Sichuan (Szechuan): Emei Shan, K. H. Shing et al. (邢公侠, 郎措永) 962 (typus), 1325, 891, 1884, under forest, alt. 1400-1700 m, 29, VIII, 1963; W.P. Fang (方文培) 12688, on grass slopes, alt. 1200m, 28, VII, 1938; ibidem 2605, 2576, in thickets, 6, VIII, 1928; T.C. Lee 3777, 9, VIII, 1940; K.C. Kuan et al. (关克俭等) 2668, 13, VI, 1964; Ya-An, H.S. Kung (孔宪需) 2715.

本新变种产四川峨眉山, 不同于原变种之点在于单羽片或小羽片卵状披针形, 基部不变狭, 圆形或圆楔形。

镰羽凤丫蕨 新种

Coniogramme falcipinna Ching et Shing, sp. nov.

Proxime affinis *C. intermediae* Hieron., differt pinnis late lanceolatis,

eximie falcatis, margine dentibus obtusiusculis prorsus exsertis, hydathodis prope bases dentium intrantibus.

Tota planta usque 1 m alta; stipite 35–60 cm longo, 2–4 mm diametro, stramineo, glabro; lamina oblonga stipiti aequilonga, 24 cm lata, impari-pinnata vel basi subbipinnata; pinnis 7–jugis, subalternis, obliquis, petiolatis, inferioribus ca. 6 cm inter se remotis, basalibus ambitu sequentibus similibus, falcato-lanceolatis, ad 15 cm longis, 3.5 cm latis, apice caudato-acuminatis vel caudatis, basi rotunda, postica vel interdum atque antica una pinnula minore praeditis, pinnis sequentibus simplicibus, supremis paulo minoribus, pinna terminali majore, basi subrotunda, petiolo ca. 2 cm longo suffulta, margine breviter serrata, venis distinctis, 1–2-furcatis, apice curvatis, parum vel vix in dentes intrantibus et in hydathodas clavaterminantibus; pagina frondis textura herbacea, in sicco virescente, utraque facie glaberrima; soris anguste linearibus, e costa ad 3–4 mm a margine extensis.

Sichuan (Szechuan): Emei Shan, K. H. Shing et al. (邢公侠, 郎措永) 1072 (typus), 877, 668, 998, under forest, alt. 1000–1500 m, 31, VIII, 1963; Nan-Chuan, Jing-Fu Shan, W.P. Fang (方文培) 5738, in woods, 4, XI, 1928.

本种产四川峨眉山, 不同于普通凤丫蕨 *C. intermedia* Hieron., 在于羽片阔披针形, 多少镰刀形、边缘的锯齿粗钝, 向前贴伏, 水囊伸达锯齿基部。

长羽凤丫蕨 新种

Coniogramme longissima Ching et Kung, sp. nov.

Haditu et magnitudine *C. maximae* Ching, differt margine pinnarum dentibus breviter deltoideis obtusiusculis prorsus exsertis, hydathodis in basin dentium intrantibus.

Tota planta ca. 1.5 m alta; stipite ad 90 cm longo, 4.5 mm diametro atro-castaneo, glabro; lamina ampla, deltoideo-oblonga, ca. 70 cm longa, basi 50 cm lata, impari-pinnata sed deorsum bipinnata; pinnis lateralibus 6–9–jugis, alternis, oblique patentibus, longe petiolatis, inferioribus ca. 10 cm inter se remotis, basalibus maximis, ad 40 cm longis, 15–20 cm latis, pinnatis, pinnulis 2–3–jugis, suboppositis, lanceolatis, 15–20 cm longis, a. 5 cm latis, apice caudato-acuminatis, basi fere rotundis, subsessilibus, pinnula terminali maxima, ad 25 cm longa, 5 cm lata, basi inaequali sessilique; pinnis sequentibus 2–jugis ternatis vel furcatis, petiolo 1.5 cm longo; pinnis ceteris simplicibus, inferioribus ad 24 cm longis, ca. 4 cm latis, marginibus parallelis, apice caudato-acuminatis, basi rotundis; pinnis supremis minoribus, ad 15 cm longis, 2.5 cm latis; pinna terminali majore, ca. 5 cm lata; venis plerumque bifurcatis, apice curvatis, in dentes intrantibus et in hydathodas anguste fusi-

formes terminantibus; pagina frondis textura tenuiter herbacea, in sicco virescente, utraque facie glabra; rachi inferne rufo-brunnea, superne straminea; soris anguste linearibus, inter se remotis, e costa ad ca. 4 mm a margine extensis.

Sichuan (Szechuan): Emei Shan, K. H. Shing et al. (邢公侠, 郎措永) 914 (typus), 1324, 984, under forest, alt. 1050-1500 m, 26, VIII, 1963; S. K. Chen 10021; H. S. Kung (孔宪需) 26; W. P. Fang (方文培) 6166.

Hubei (Hupeh): Ba-Dong, C. L. Cheng et al. (陈膺伦等) 1849, in ravine, alt. 950 m. 3, X, 1952; Xuan-An, H. K. Li (李洪钧) 4776, by road side, alt. 1000 m. 27, VII, 1958.

本种产四川峨眉山及湖北巴东及宣恩, 形体近阔带凤丫蕨 *C. maxima* Ching, 但羽片边缘的锯齿为矮钝的三角形, 向前贴伏, 水囊伸入锯齿基部。

兴仁凤丫蕨 新种

Coniogramme xingrenensis Ching et shing, sp. nov.

Habitu arcte affinis *C. intermediae* Hieron., a qua differt stipite brunneo, pinnis simplicibus, medio latiore, basim versus angustatis, pinnis basalibus pinnulas 3-jugis gerente, margine hydathodis solum ad bases dentium egredientibus.

Tota planta 1.4 m alta; stipite ca. 75 cm longo, 5 mm diametro, brunneo, glabro; lamina deltoideo-ovata, 60 cm longa, basi ca. 30 cm lata, imparipinnata, deorsum bipinnata; pinnis lateralibus 7-jugis, suboppositis, oblique patentibus, inferioribus petiolatis, ca. 10 cm inter se remotis, basalibus maximis, 30 cm longis, pinnatis; pinnulis lateralibus 3-jugis, ca. 10 cm longis, medio 2-3 cm latis, basin versus angustatis, pinnula terminali maxima, ultra 20 cm longa, ad 5 cm lata, apice longe acuminata, basi rotunda; pinnis sequentibus ternatis, petiolo 1.5 cm longo, pinnulis lateralibus ad 8 cm longis, sessilibus, pinnula terminali maxima, 21 cm longa, 5 cm lata, basi rotunda, petiolata (petiolo 2 cm longo); pinnis ceteris simplicibus, inferioribus magnitudine pinnulae pinnarum inferiorum similibus, breviter petiolatis, basi rotundis; pinnis supremis minoribus, 11 cm longis, 2 cm latis, sed pinna terminali paulo majore; venis distinctis, bifurcatis, apice rectis, ad basin dentium protensis, in hydathodas elongatas incrassatas terminantibus; pagina frondis firme herbacea, in sicco obscure viridi, utraque facie glabra; soris crasse linearibus, approximatis, e costa fere ad marginem pinnarum extensis.

Guizhou (Kweichow): Xing-ren, Guizhou Bot. Exped. 8481 (typus), on grass slope, alt. 1200 m, 25, VIII, 1960.

本新种产贵州兴仁, 形体近普通凤丫蕨 *C. intermedia* Hieron., 但叶柄棕色, 单羽

片中部最宽，向基部变狭，侧脉顶端的水囊伸达锯齿基部附近。

红杆凤丫蕨 新种

Coniogramme rubescens Ching et shing sp. nov.

Ex affinitate *C. xingrenensis* Ching, a que differt stipite rubescente, supra stramineo-rubescente-maculato, pinnis pinnulisque supra praeter costas hirtas glabris nitentibusque, subtus densissime breviter pilosis, pilis brevibus, basi bullatim incrassatis.

Tota planta 1.4 m alta; stipite ap 85 cm longo, 5 mm crasso, rubescente, glabro nitenteque, supra stramineo-rubescente-maculato; lamina ca. 60 cm longa, 25 cm lata, ovato-deltoidea, bipinnata; pinnis 5 utroque racheos latere, suboppositis, obliquis, inferioribus 2-jugis ca. 16 cm inter se remotis, pinnatis, basalibus maximis, 40 cm longis, 18 cm latis, petiolo 3.2 cm longo stipitatis, impari-pinnatis pinnulis lateralibus 3-jugis, alternis, 7 cm inter se remotis, ad 15 cm longis, 3.5 cm latis, oblongis, apicem versus in caudam 3-4 cm longam linearem, remote serrulatam subito contractis, basi rotundatis, petiolulo 5 mm longo stipidatis vel supremis sessilibus, pinnula terminali majore, 20 cm longa, fere ad 4.5 cm lata, oblongo-lanceolata, pinnis sequentibus ternatis, petiolatis (petiolo 1.5 cm longo), pinnulis iis pinnarum basalium similibus, pinnis ceteris superioribus simplicibus, ca. 7 cm inter se remotis, breviter petiolatis, similibus sed basi breve cuneatis, pinna terminali simili, basi cuneata, latere inferiore unam pinnam parum minorem gerente; marginibus modice serratis, dentibus parvis, deltoideo-obliquis, acutis; nervis utrinque distinctis, 2-furcatis, liberis, apice rectis, usque ad bases dentium egredientibus, in hydathodas elongatas vix incrassatas, supra prominulas terminantibus; pagina frondis firmiter herbacea, in statu sicco viridi, supra praeter costas hirtas glabra nitenteque, subtus densissime breviter pilosa, pilis pallidis, brevibus, basi bullatim incrassatis; rachi costisque pallide stramineis; soris densis, crassis, e costa usque ad ca. 3 mm a margine protensis.

Yunnan: Lin-Zhong, Ma-Yi-Ba, K. S. Sin (辛景三) 517 (typus), among thicketes in ravine, alt. 1300-1500 m, 28, VIII, 1957.

形体颇似兴仁凤丫蕨 *C. xingrenensis* Ching 但叶柄栗红色，或禾秆色饰有红色，羽片和小羽片上面沿羽轴有疏短柔毛，下面密生基部有乳头突起的短毛。

怒江凤丫蕨 新变种

Coniogramme caudata (Ettingsh.) Ching var. **salwinensis** Ching et shing, var. nov.

A typo speciei differt pinnis angusti-lanceolatis, ad apicem gradatim angu-

statis et caudato-acuminatis, facie inferiore glabris.

Yunnan bor.-occid.: Salwin valley, Balanlo, T. T. Yu (俞德浚) 23123 (typus), under mixed forest on rocks, alt 3000 m, 27, IX, 1938. common.

Xizang (Tibet): Zhang-mu, Kokonor-Tibet complex. Exped. 4495, under evergreen forest, alt. 2200-2300 m.

本变种产西藏樟木, 不同于原种之点在于羽片为狭披针形, 宽仅2—2.5厘米, 尾状长渐尖头, 下面无毛。

带羽凤丫蕨 新种

Coniogramme simileima Ching, sp. nov.

Ex affinitate *C. affinis* (Wall.) Ching, a qua differt pinnis medialibus late lineari-lanceolatis, apice caudatis, subtus puberulis.

Tota planta 80-120 cm alta; rhizomate late repente, 1 cm crasso, paleis atro-brunneis, lanceolatis obtecto; frondibus 3-4 cm inter se remotis, stipite 30-50 cm longo, 2-3 mm diametro, parte inferiore castaneo, sursum ut rachi stramineo glabroque suffultis; lamina 45-70 cm longa, ca. 30 cm lata deltoideo-oblonga, impari-pinnata sed basi bipinnata; pinnis lateralibus ca. 8-jugis, alternis, obliquis, ca. 4.5 cm inter se remotis, inferioribus 2-jugis ca. 8 cm inter se remotis, oppositis, pinnatis, basalibus maximis, 15-20 cm longis, 8-12 cm latis, ovatis, petiolo 2.5 cm longo suffultis; pinnulis lateralibus 2-jugis, 3 cm inter se remotis, 7-8 cm longis, 1.5-2 cm latis, lanceolatis, apice subcaudatis, basi subinaequaliter rotundo-cuneatis, sessilibus vel postice leviter adnatis, pinnula terminali maxima, ad 18 cm longa, 2.8 cm medio lata, e basi rotundo-cuneata linearilanceolata, utroque marginibus parallela, apice breviter caudata, basi breve petiolulata; pinnis sequentibus uni-jugis ternatis, petiolo 1 cm longo stipitatis, pinnulis ambitu iis pinnarum basalium similibus; pinnis ceteris simplicibus, inferioribus ad 18 cm longis, 2-2.4 cm latis, supra medium saepe parum latioribus, petiolo ca. 6 mm longo stipitatis supremis brevioribus, 11 cm longis, 2 cm latis, sessilibus vel basi plus minusve adnatis, pinna terminali ambitu conformi; marginibus creberrime serratis, dentibus deltoideis, acutis, introrsim decumbentibus, margine cartilagineis; nervis plerumque furcatis, obliquis, parallelis, apice fere rectis, marginem pinnarum fere attingentibus, in hydathodas elongatas vix incrassatas terminantibus; pagina frondis herbacea, in sicco viridi, ubique praeteream subtus perparce puberulam glabra; soris sat densis, e costa usque ad 3-4 mm a margine extensis.

Guizhou (Kweichow): Qing-Zhen, Yun-Gei Shan, Guizhou Bot. Exped. 1677 (typus) in thickets, alt. 1600 m, 10, X, 1956.

Yunnan: Jing-Dong, Wu-Liang Shan, P. Y. Chiu (邱炳云) 52877, in

damp wooded valley, alt. 2100 m, 15, X, 1956.

Guangxi (Kwangsi); Da-Miao Shan, S. C. Chun (鍾心煊) 16826, under forests, 19, X, 1958; ibidem 17059, alt. 1200-1600 m, 4, XI, 1958; Long-Ling, Jing-Zhung Shan, T. Y. Wei et T. M. Lai 40834, in wooded ravine, alt. 1860 m, 10, III, 1956.

本新种产贵州(清镇)、云南(景东)、广西(大苗山), 形体略近尖齿凤丫蕨 *C. affinis* (Wall.) Ching, 但中部羽片带状披针形, 尾头, 下面有短柔毛。

台北凤丫蕨 新种

Coniogramme taipeiensis Ching, sp. nov. *Coniogramme intermedia*

W. C. Shieh in Fl. Taiwan (台湾植物志) 1: 310. 1975, pro parte.

Ex affinitate *C. intermediae* Hieron., a qua differt pinna apice acuto-caudata, basi rotundo-cuneata, marginibus serratis, dentibus deltoideis, obtusis, subferrugineo-cartilagineis, sinubus arcuatis; hydathodis in apice dentium marginem abeuntibus.

Tota planta ca. 95-120 cm alta; stipite ca. 65 cm longo, 65 cm longo, ad 5 mm basi crasso, ut rachi stramineo vel ochreo-stramineo, glabro, laevi supra profunde sulcato, infra tereti; lamina ovato-oblonga, ca. 45 cm longa, 26 cm basi lata, bipinnata, sursum impari-pinnata; pinnis 7-8 utroque racheos latere, alternis vel subalternis, obliquis, supremis sessilibus aut saepe parum adnatis, ceteris omnino [petiolatis (petiolo pinnarum infimarum 1-1.7 cm longo) basalibus maximis, 28 cm longis, 10 cm latis, ovatis, suboppositis, imparipinnatis; pinnulis lateralibus 2-3-jugis, 2.5-3 cm inter se remotis, 10-12 cm longis, 1.5-2 cm latis, lanceolatis, apice acutocaudatis, basi rotundo-cuneatis, sessilibus, pinnula terminali simili sed majore, ad 15 cm longa, 3 cm medio lata, latelanceolata, apice sensim in cuspidem 2-2.5 cm longam linearem, remote serrulatam acuminata; pinnis sequentibus a basalibus ca. 11 cm remotis, ternatis aut bipartitis, pinnulis iis pinnarum infimarum similibus; pinnis ceteris superioribus semper simplicibus, ca. 5 cm inter se remotis, breve petiolatis, 15-22 cm longis, ca. 2.5 cm medio latis, lanceolatis, basi rotundo-cuneatis, supremis minoribus; pinna terminali majore, basi subaequali vel saepe inaequali, petiolo 1.4-2 cm longo suffulta; marginibus e basi denato-serratis, dentibus deltoideis, subpatentibus, subferrugineo-cartilagineis; nervis 1-vel 2-furcatis, utrinque prominulis, apice rectis, in apices dentium abeuntibus, in hydathodas angustato-clavatas supra distinctas terminantibus; pagina frondis firmiter herbacea, in sicco virescente, subtus pallidiore et glabra; soris linearibus, creberrimis, usque ad ca. 2-3 mm a margine protensis.

Taiwan; Taipei, Mt. Roppei, alt. ca. 1500 m, leg. Suzuki-tokio (typus),

18 VIII, 1935.

本新种产台湾台北, 形体近普通凤丫蕨 *C. intermedia* Ching, 但羽片急尾头, 基部圆楔形, 边缘的锯齿钝三角状, 有褐棕色软骨质边, 齿间弯缺浅弧形, 小脉顶端的水囊伸达锯齿边缘。

卵羽凤丫蕨 新种

Coniogramme ovata S. K. Wu, sp. nov.

Species insignis ex affinitate *C. intermediae* Hieron., differt pinnis ellipticis vel ovato-oblongis, 10-12 cm longis, 3-4 cm medio latis.

Tota planta ca. 80 cm alta; stipite 28-32 cm longo, 3-4 mm crasso, stramineo, glabro, basi paleis brunneis lanceolatis sparse oblecto excepto; lamina ca. 45 cm longa, 18-20 cm lata, ovato-oblonga, bipinnata; pinnis lateralibus ca. 7-jugis, basalibus maximis, 16 cm longis, 8-10 cm latis, ovato-delloideis, petiolatis (petiolo 1 cm longo), ternatis; pinnulis lateralibus 8 cm longis, 2-2.5 cm latis, ovatis, apice breve caudatis, basi rotundo-cuneatis, sessilibus, pinnula terminali maxima, pinnae mediae simili, sed basi furcata, petiolulata (petiolula 1 cm longa), pinnis jugi secundarii furcatis, ceteris superioribus simplicibus, ellipticis vel oblongis, caudatis, basi rotundo-cuneatis, breviter petiolatis vel sessilibus, pinna terminali maxima, pinnis inferioribus conformi, 5-5.5 cm lata, basi inaequali; marginibus serratis, dentibus magnis, delloideis, prorsus exserris; hydathodis clavatis, dentes aliquanto attingentibus; pagina frondis herbacea, pallide brunneo-viridi, utrinque glabra; soris tenuibus, linearibus, e costae ad 1/2-2/3 latitudinis pinnarum protensis.

Yunnan; Yan-Jing, Kunming Bot. Inst. 1204 (typus), under forest on rock, alt. 1400 m, 24, IX, 1964.

本新种产云南盐津, 不同于普通凤丫蕨 *C. intermedia* Hieron., 在于单羽片长椭圆形或卵状长圆形, 长10—12厘米, 中部宽3—4厘米。

圆齿凤丫蕨 新种

Coniogramme crenatoserrata Ching et Shing, sp. nov.

Species proxima *C. intermediae* Hieron., a qua differt pinnis pinnulisque lineari-lanceolatis, i. e. e basi rotunda marginibus lateralibus parallelis, margine crenatis, crenis valde incurvatis, imbricato-confertis.

Tota planta ca. 1 m alta; stipite 48-60 cm longo, 4 mm crasso, parte inferiore rubescente brunneo, superiore brunneo-stramineo, glabro, nitido, laevique; lamina ca. 35-45 cm longa, ca. 23 cm lata, delloideo-ovata, imparipinnata, basi pauci-bipinnata excepta; pinnis 5 utroque racheos latere, subop-

positis, obliquis, 6-7 cm inter se remotis, basalibus maximis, 21 cm longis, ca. 13 cm latis, deltoideis, impari-pinnatis; pinnulis lateralibus 2-jugis, oppositis, 7-9 cm longis, 2.5-3 cm latis, e basi latissima rotundaque elongato-ovatis, sessilibus vel parum ad rachillam adnatis, apice in caudam 1.5-2.5 cm longam contractis, pinnula terminali maxima, ad 16 cm longa, 4 cm lata, basi breviter cuneata et petiolulo 2 cm longo suffulta; pinnis superioribus omnibus simplicibus, 12-16 cm longis, 3-4 cm latis, late lanceolatis, basi rotundatis, petiolatis (petiolo 4-10 mm longo), supremis sessilibus aut parum adnatis; pinna terminali lamina majore, 17 cm longa, 4.3 cm supra basin breviter cuneatam lata, petiolo 1.2 cm longo stipitata; marginibus e basi pinnarum crenato-serratis, dentibus valde incurvatis, imbricato-confertis; nervis 1-2-furcatis, apice leviter incurvatis, in dentes intransibiles et in hydathodas clavato-incrassatas terminantibus; pagina frondis chartacea, in sicco supra obscurius viridi, subtus pallidior, utrinque glabra; soris tenuibus, e costa usque ad partem tertiam latitudinis pinnarum protensis, ca. 6 mm a margine remotis.

Yunnan austro.-orient.: Xin ping, V. M. Chu (朱维明) 190 (typus), by stream side under forest, alt. 1500 m, 1, II, 1957, common.

本新种产云南东南部新平, 极似普通凤丫蕨 *C. intermedia* Hieron., 但羽片尾头, 羽片和小羽片边缘的锯齿前伸而向内弯曲, 彼此密接如复瓦状, 水囊略伸入锯齿。

贵州凤丫蕨 新种

Coniogramme guizhouensis Ching et Shing, sp. nov.

Species *C. intermediae* Hieron. affinis, differt pinnis angustioribus minoribusque, apice caudato-acuminatis, margine dentibus prorsus curvatis, hydathodis in dentes profunde intransibiles.

Tota planta ca. 90 cm alta; stipite ca 30-50 cm longo, 5 mm diametro, dimidia parte inferiore purpurascens-stramineo, sursum pallide stramineo, nitido nudoque, supra late sulcato, infra tereti, ad basin squamuloso; lamina oblonga, 45 cm longa, 20 cm basi lata, impari-pinnata aut basi bipinnata cum pinnula terminali impari; pinnis lateralibus 7-8-jugis, obliquis, oppositis, inferioribus ca. 7 cm inter se remotis, basalibus maximis, ternatis vel pinnatis, 18-22 cm longis, ovato-triangularibus, petiolo 1 cm longo stipitatis; pinnulis lateralibus oppositis quam pinnula terminali multo minoribus, 8 cm longis, 1.5-2 cm medio latis, lanceolatis, caudato-acuminatis, basi parum adnatis, pinnula terminali maxima, 17 cm longa, 4 cm lata, apice in cuspidem linearem ca. 2 cm longam margine remote acute serratam abrupte acuminata, basi cuneato-rotundata, petiolulata (petiolulo 2.4 cm longo); pinnis sequentibus omnibus simplicibus, 3-5 cm inter se remotis, mediis 13-15 cm longis, 2-2.5 cm

medio latis, utrinque parum angustatis, lineari-lanceolatis, petiolulatis (deitolo 2 mm longo), apice in caudam 2.5 cm longam linearem abeuntibus, basi rotundatis; pinnis supremis conformibus sed minoribus, pinna terminali laminae parum majore, petiolulo 1.5 cm longo suffulta; marginibus pinnarum minute et creberrime serrulatis; nervis liberis, obliquis, ima basi vel parum supra basin bifurcatis, nervulis parallelis, apice parum introrsum curvatis et in dentes profunde intrantibus, in hydathodas clavatas terminantibus; pagina frondis papyracea, utrinque glabra, in sicco virescente; soris e costa pinnae ad fere 2 mm a margine protensis.

Guizhou (Kweichow): Qing-chen, Guizhou Bot. Exped. 1770 (typus), on limestone hillside, alt. 1450 m, 12, X, 1936; Yin-Jiang, C. P. Kien et al. (简焯坡等) 30677, alt. 870 m, 14, VIII, 1963; Jiang-Kou, l. c. 32569, in forest, alt. 950 m, 30, X, 1963.

Sichuan (Szechuan): Hong-Ya, Wa-Wu Shan, T. W. Yao (姚仲吾) 2535, 25, VII, 1938.

Guangdong (Kwengtung): Lo-Fu Shan, F. A. McClure, Levine 12679, 31, XI, 1921.

本新种产贵州(清镇、印江、江口)、四川(洪雄、瓦屋山)、广东(罗浮山), 形体颇似普通凤丫蕨 *C. intermedia* Hieron., 但羽片较狭小, 顶端尾状渐尖, 边缘的锯齿向前弯, 叶脉顶端的水囊几达锯齿的下侧边。

阔带凤丫蕨 新种

Coniogramme maxima Ching et Shing, sp. nov.

Ex affinitate *C. intermediae* Hieron., differt pinnis aut pinnulis late lineari-lanceolatis, apice longe caudato-acuminatis,

Tota planta ad 1.5 m alta; stipite 50-70 cm longo, 5-6 mm diametro, stramineo vel interdum brunneo-stramineo, glabro; lamina ampla, oblonga, 65-95 cm longa, impari-pinnata, deorsum bipinnata; pinnis lateralibus 7-9-jugis, suboppositis, obliquis, petiolatis, inferioribus 9-11 cm inter se remotis basalibus majoribus, 30-40 cm longis, petiolo 1.5-2 cm longo, pinnatis; pinnulis lateralibus 1-2-jugis, oppositis, breviter petiolatis, 12-15 cm longis, 1.5-2.5 cm latis, late lanceolatis, caudato-acuminatis, basi rotundis, pinnula terminali maxima, 25-32 cm longa, 3.5-4.2 cm lata, late lanceolata, longe caudato-acuminata, basi rotundo-truncata; pinnis sequentibus simplicibus aut ternatis, pinnulis iis pinnarum basaliu similibus; pinnis superioribus simplicibus ad 32 cm longis, 3.5 cm latis, medio latiore, apice longe caudato-acuminatis, basi rotundo-cuneatis, petiolo 1.2 cm longo, margine dentibus magnis, acutis, oblique patentibus; pinnis ceteris similibus, supremis minoribus,

ad 16 cm longis, 2.8 cm latis; pinna terminali majore, 4 cm lata, petiolo 2-3 cm longo suffulta; venis supra visibilibus, bifurcatis, apice fere rectis, in dentes intransibiles et in hydathodas fusiformes terminantibus; pagina frondis textura chartacea, in sicco viridi, facie subtus sat dense pilosa; soris crasse linearibus, approximatis, e costa fere ad marginem extensis.

Sichua (Szechuan): Emei Shan, K. H. Shing et al. (邢公侠, 郎楷永) 1171 (typus), 1172, 1170, in the back courtyard of the temple Da-Ping-Zi, alt. 1520 m, 2, IX, 1963; Jiu-Lao-Dung, 1. c. 721, by the edge of bamboo grove, alt. 1810 m, 22, VIII, 1963; Hung-Chun-ping, R. C. Ching (秦仁昌) 123, III, 1956; Da-Xiang-Ling, H. S. Kung (孔宪需) 3694.

Yunnan: Kunming, K. M. Feng (冯国楣) 10363, X, 1946 et 3495, IV, 1940.

本新种产四川峨眉山及云南昆明, 形体近普通凤丫蕨 *C. intermedia* Hieron., 但单羽片阔线状披针形, 长尾状渐尖头。

尾尖凤丫蕨 新种

Coniogramme caudiformis Ching et Shing, sp. nov.

Ex affinitate *C. crenatoserratae* Ching, s qua differt pinnis aut pinnulis apice in caudam linearem 2-2.5 cm longam subito contractis, marginibus argute serratis.

Tota planta 70-100 cm alta; rhizomate repente, ca. 8 mm crasso, paleis atro-brunneis, lanceolatis sparse onusto; frondibus distantibus, stipite 30-55 cm longo, 3-4 mm diametro, inferne purpureo vel stanmineo sed purpureo-maculato, glabro nudoque suffultis, lamina 40-50 cm longa, 20-25 cm lata, ovato-oblonga, pinnata aut basi bipinnata; pinnis lateralibus 4-7-jugis, obliquis, alternis, 4-5.5 cm inter se remotis; basalibus maximis, 15-20 cm longis, 8-14 cm latis, ovatis, petiolo 1-1.5 cm longo suffultis, 3-5-foliolatis, pinnulis lateralibus quam pinnula terminali magis minoribus; pinnis sequentibus simplicibus (interdum inferioribus trifoliolatis), apicem versus subito in caudam 2-2.5 cm longam, 2 mm latam linearem remote acute serratam desinentibus, basi subrotundatis vel cuneato-rotundatis, breviter petiolulatis; pinna terminali inferioribus parum majore, petiolulata, basi subaequali, marginibus supra basin acute serratis, dentibus sat magnis, deltoideo-acutis, obliquis; nervis tenuibus, subtus prominulis, 2-4-furcatis, in dentes aliquanto extensis et in hydathodas magnas clavatas terminantibus; pagina frondis herbacea, in sicco viridescens, subtus sparce longe pubescentia, supra glabra (rarissime pilis sat longis, persparce conspersa); soris tenuibus, crebris, brunneis, e costa usque ad 2/3 latitudinis pinnarum protensis.

Sichuan (Szechuan): Emei Shan, Pan 327 (typus), 22, VII, 1938; K. H. Shing et al. (邢公侠, 郎楷永) 734, 688, 539, 546, 1861, 608, VIII, 1963,

ibidem 15, 29, 44, VI, 1676; K. C. Kuan et al. (关克俭) 2537, XI, 1964; Yunnan Compl. Exped. 1801, VI, 1955; Guan-Xian, W. P. Fang (方文培) 2064, in thickets, alt. 800-1000 m, 6, VII, 1928; Da-Xiang-Ling, H. S. Kung (孔宪需) 4011; Ya-an, T. S. Yin (应俊生) 1709; Tian-Quan, W. K. Hu et al. (胡文广等) 11855; Lei-po, T. T. Yu (俞德浚) 4073; Nan-Chuan, Jing-Fo Shan, K. F. Li (李国风) 62553.

本新种产四川, 颇近圆齿凤丫蕨 *C. crenatoserrata* Ching, 但羽片和小羽片顶端具线形长尾(长2—2.5厘米), 边缘具矮的尖锯齿。

阔基凤丫蕨 新种

Coniogramme latibasis Ching, sp. nov.

Species e grege *C. intermdiae* Hieron., a qua specie racedit stipite solum purpurascente, plantamulto magna, pinnis aut pinnulis late lanceolatis, inferne basi latioribus, ad 4.5 cm latis, sursum angustatis, apice longe caudato-acuminatis.

Tota planta 1-1.2 m alta; stipite 60 cm longo, 6 mm crasso, valido, inferne purpurascente, superne stramineo, glabro, basi paleis brunneis, lanceolatis densissime oblecto excepto; lamina stipitem fere aequante, oblonga, ca. 30 cm basi lata, bipinnata; pinnis in specimine 7 utroque racheos latere, suboppositis, obliquis, inferioribus 2-jugis majoribus, 13 cm inter se remotis, pinnatis, basalibus maximis, petiolo 2.3 cm longo stipitatis, 28 cm longis, 18 cm latis, impari-pinnatis; pinnulis lateralibus, 2-jugis, suboppositis, 12 cm longis, 3 cm basi latis, e basi latissima oblongo-lanceolatis, apice caudato-acuminatis, pinnula terminali maxima, 22 cm longa, 4.5 cm basi lata, late lanceolata, caudato-acuminata; pinnis sequentibus minoribus, petiolo 1.5 cm longo suffultis, ternatis, pinnulis iis pinnarum basalium similibus; pinnis ceteris superioribus simplicibus, inferioribus 7-8 cm inter se remotis, 20 cm longis, 4 cm basi latis, e basi rotundata latissimaque gradatim angustatis; pinnis supremis minoribus, 15 cm longis, 3 cm basi latis, parum adnatis; pinna terminali pinnis infimis conformi, basi late rotundata, petiolo 2.5 cm longo suffulta; marginibus grosse serratis, dentibus magnis, deltoideis, acutis, patentibus; nervis utrinque distinctis, bis furcatis, apice incurvatis, in dentes dimidias intransibibus, in hydathodas elongatas incrassatas supra prominentes terminantibus; pagina frondis herbacea, in statu sicco supra viridi, subtus pallidiore et glabro; rachi ubique straminea glabraque; soris sat densis, crassis, e costa usque ad 5 mm a margine protensis.

Yunnan bor.-occid.,: Deng-chuan, Wang-Jia-Ping, R. C. Ching (秦仁昌) 2482 (typus), in thickets, 22, IX, 1940; Xi-Chou, Fa-Dou, C. R. Wang

(王中仁) 569, p. p. alt. 1550 m; Ma-Guan, ibidem 770 p. p. alt. 1900m, 26, I, 1978.

本新种产云南(腾冲、西畴), 颇近普通凤丫蕨 *C. intermedia* Hieron., 但植株较大, 羽片和小羽片阔披针形, 基部宽达4.5厘米, 向顶部逐渐变狭, 尾状长渐尖头。

广东凤丫蕨 新种

Coniogramme guangdongensis Ching, sp. nov.

Species arcte affinis *C. intermediae* Hieron., a qua differt pagina frondis chartacea, pinnis minoribus angustioribusque, apice caudato-acuminatis, marginibus dentatis, dentibus minutis, apice spinosis, hydathodis fere usque ad marginem dentium attingentibus.

Tota planta 90-100 cm alta; rhizomate repente, apice ut basi stipitum paleis atro-brunneis, lanceolatis sat dense oblecto; fronde stipite 45-55 cm longo, 3 mm crasso, stramineo, glabroque suffulta; lamina 42-46 cm longa, 20-25 cm lata, oblongo-deltaidea, bipinnata; pinnis 8-9 utroque racheos latere, inferioribus oppositis, ca. 7 cm inter se remotis, superioribus alternis, sessilibus vel supremis basi postice leviter adnatis, 4-5 cm inter se separatis, basalibus maximis, 15-20 cm longis, 5-8 cm latis, elongato-ovatis, petiolo 1.5 cm longo stipitatis, impari-pinnatis; pinnulis lateralibus 3-jugis, oppositis, 2 cm inter se remotis, lanceolatis, 5-7 cm longis, ca. 1.5 cm latis, apice subcaudato-acuminatis (cauda 2-2.5 cm longa), basi rotundo-cuneatis, sessilibus et parum decurrentibus; pinnula terminali majore, 15-17 cm longa, ca. 2.5 cm lata, lanceolata; pinnis ceteris superioribus simplicibus (aut infimis interdum bipartitis), infimis 15 cm longis, 2 cm latis, sursum brevioribus, supremis 9 cm longis, 1.5 cm latis, omnino apice longe caudato-acuminatis, basi rotundo-cuneatis; pinna terminali medii simili; margiibus e basi dense serrulatis, dentibus minutis, deltaideis, apice spinosis, subpatentibus, margine cartilagineis, nervis bifurcatis, nervulis tenuibus, obliquis, supra prominulis, apice parum incurvatis, marginem pinnarum attingentibus et in hydathodas elongatas parum incrassatas terminantibus; pagina frondis tenuiter chartacea, in sicco glauco-viridi, supra glabra, subtus parce puberula; soris crassiusculis, densis, e costa fere ad marginem extensis.

Guangdong (Kwangtung): Lo-Chang, Chuang-Yuan Shan, W. T. Tsang (曾怀德) 20892 (typus), in thickets on swampy soil, 2, XI, 1932.

本新种产广东乐昌(状元山), 形体近似普通凤丫蕨 *C. intermedia* Hieron., 但叶质较厚, 羽片较狭小, 尾状渐尖头, 边缘的锯齿细密而锐尖, 水囊几达齿缘。

台湾凤丫蕨 新种

Coniogramme taiwanensis Ching, sp. nov.

Ex affinitate *C. intermediae* Hieron., a qua differt pinnis pinnulisque anguste lanceolatis, non ultra 2 cm latis, apicem versus gradatim attenuato-acuminatis, margine dentibus obtusis brevibusque.

Species elegans, usque ad 85 cm alta, rhizomate repente, valido, lignoso, apice paleis atro-brunneis lanceolatis oblecto, fronde stipite 32 cm longo, basi 3-4 mm crasso, ut rachi stramineo, supra late sulcato suffulta, lamina usque 55 cm longa, ca. 25 cm lata, oblonga, bipinnata, sursum pinnata cum pinna terminali impari, pinnis 8-9 utroque racheos latere, alternis, obliquis, inferioribus 3-jugis pinnatis, ca. 9 cm inter se remotis, ceteris simplicibus, pinnis basalibus, majoribus, subalteris, 26 cm longis, 17 cm latis, ovatis, petiolo 2.5 cm longo stipitatis, impari-pinnatis, pinnulis lateralibus 2-3-jugis, suboppositis 11-12 cm longis, 1.5 cm latis, anguste lanceolatis, apicem versus gradatim attenuato-acuminatis, basi late rotundo-cuneatis, breviter (2-3 mm) petiolulatis, pinnula terminali majore, 18 cm longa, 2 cm basi lata, basi valde inaequali et latere exteriori unam pinnam minorem parum adnatam gerente, pinnis sequentibus 2-jugis pinnatis aut ternatis, pinnulis iis pinnarum infimarum similibus, pinnis ceteris superioribus simplicibus, 4 cm inter se remotis, infimis 18 cm longis, 1.7 cm latis, sursum brevioribus, supremis ca. 10 cm longis, 1.5 cm latis, omnibus apice anguste attenuato-acuminatis, e basi latiore subfalcato-lanceolatis, pinna terminali parum majore, petiolo 1 cm longo suffulta, marginibus e basi minute serrulatis, dentibus deltoideis, acutis, subpatentibus, nervis liberis, plerumque furcatis, apice rectis, marginem cartilagineum fere attingentibus et in hydathodas elongatas parum incrassatas supra distinctas terminantibus, pagina frondis herbacea, in sicco supra obscurius viridi, subtus pallidior et glabra, soris densis, ad 2 mm a margine extesis.

Taiwan: Taipei, Mt. Taiheizan, leg. S. Suzuki (typus), 8, XI, 1927; Y. T. Hsu (徐永椿), s. n. 1948.

本新种产台湾台北, 形体略近普通凤丫蕨 *C. intermedia* Hieron., 但叶片分裂繁密, 单羽片和小羽片狭披针形, 宽不过 2 厘米, 边缘的锯齿疏而矮。

优美凤丫蕨 新变种

Coniogramme intermedia Hieron. var. **pulchra** Ching et Shing, var. nov.

A typo speciei differt planta minore, pinnis brevioribus, ad apices non gradatim angustiusculis sed abrupte caudatis.

Sichuan (Szechuan): Guan Xian, Qing-Cheng Shan, H. C. Chow (周鹤昌)

1174 (typus), alt. 800 m, 15, XI, 1939; Emei Shan, K. H. Shing et al.
(邢公侠, 郎措永) 623, alt. 1880 m, 20, VIII, 1963.

Guizhou (Kweichow) : Pu-An, Guichou Bot. Exped. 1364, 7, IX, 1959.

Jiangxi (Kiangsi) : Wu-Gong Shan, Jiagxi Bot. Exped. 257, 4, V, 1954.

Fujian (Fukien) : Chong-An, Tong-Mu country, P. S. Chu 1921, 9, VIII, 1958.

Yunnan: Zhen-Xiong, P. H. Yu 1145, alt. 1520 m, 2, X, 1957.

本新变种产四川(青城山、峨眉山)、贵州(普安)、云南(镇雄)、江西(武功山)、福建(崇安、桐木乡), 不同于原变种之点在于植株较小, 羽片短小, 急尾头。

单网凤丫蕨 新种

Coniogramme simplicior Ching, sp. nov.

Ex affinitate *C. latibasis* Ching, a qua differt pinnis e basi latissima rotundataque, nervis inferioribus interdum pauci-areolatis, hydathodis saepe usque ad bases dentium egredientibus.

Tota planta ca. 70 cm alta; rhizomate repente, 8 mm crasso, praesertim ad apicem paleis atro-brunneis, lanceolatis dense onusto; frondibus distantibus, stipite castaneo, subnitido, ca. 33 cm longo, basi 3-4 mm diametro et paleis iis rhizomatis similibus praedito suffultis; lamina ca. 35 cm longa, 22 cm basi lata, elongato-ovata, simpliciter pinnata (pinnis basalibus solum bipartitis) cum pinna terminali impari; pinnis lateralibus 5-6-jugis, suboppositis, obliquis, inferioribus 2-jugis ca. 7 cm inter se remotis, oppositis, basalibus majoribus, 18 cm longis, 3 cm latis, late lanceolatis, petiolo 1 cm longo stipitatis, apice caudato-acuminatis (cauda 2.5 cm longa, lineari), basi bipartitis, pinnula basali inferiore 8 cm longa, 1.5-2 cm lata, e basi latissima rotundataque lanceolata, parum decurrente; pinnis sequentibus semper simplicibus, 4-4.5 cm inter se remotis, inferioribus petiolatis (petiolo ca. 5-3 mm longo), supremis sessilibus vel parum adnatis et minoribus, omnibus e basi latissima (ca. 3 cm) rotundataque lanceolatis et sursum gradatim angustatis, pinna terminali simili, breviter petiolata; marginibus serratis, dentibus deltoideis, acutis, incurvatis; nervis utroque distinctis, 1-2-furcatis, inferioribus interdum pauci-areolatis, apice usque ad bases dentium egredientibus, in hydathodas elongatas vix incrassatas terminantibus; pagina frondis tenuiter herbacea, in sicco virescente, supra glabra, subtus costisque e basi petioli sat dense breviter puberulis, rachi straminea nitidaque; soris tenuibus, separatis, e costa usque ad vel ultra dimidiam latitudinis pinnarum egredientibus.

Yunnan occid.: Bin-Chuan, Ji-Zu Shan, specimen (typus) ex Herb. Univ. Yunnan, by stream side in ravine under forest, alt. 2300 m, VIII, 1954,

本新种产云南宾川(鸡足山), 颇似阔基凤丫蕨 *C. latibasis* Ching, 但侧脉偶联成一、二网眼, 小脉顶端的水囊伸达锯齿基部。

井岗山凤丫蕨 新种

Coniogramme jinggangshanensis Ching et Shing, sp. nov.

Ex affinitate *C. intermediae* Hieron., a qua differt planta majore, pinnis margine dentibus breviter deltoideis, obtusi-usculis prorsus exsertis; nervis liberis, sed interdum pauciareolatis; hydathodis ad basin dentium protensis; species etiam statura *C. japonicae* (Thunb.) Diels quoque similis, sed pinnis lineari-lanceolatis, nervis areolas paucas formantibus, nec in 2-3-series areolarum reticulatis. Fortasse hybrida inter se est.

Tota planta usque ad 1.5 m alta; stipite ca. 70 cm longo, brunneo-purpureo, ca. 5 mm crasso, basi paleis vestito, sursum glabro; lamina stipite longiora, ca. 30 cm lata, ovato-oblonga, bipinnata; pinnis lateralibus ca. 8-jugis, basalibus maximis, 35 cm longis, 15 cm latis, ovato-deltoideis, petiolo 3 cm longo stipitatis, pinnatis; pinnulis lateralibus 3-jugis, inter se remotis, 15 cm longis, 2 cm latis, lanceolatis, longe acuminatis, basi late cuneatis; pinnula terminali longiora, pinnae mediae simili; pinnis mediis ternatis vel furcatis, ceteris superioribus simplicibus, gradatim brevioribus, lineari-lanceolatis; marginibus crenatis, dentibus prorsus exsertis; pagina frondis herbacea, in sicco atro-viridi, utrinque glabra; nervis liberis, sed interdum pauci-areolatis; hydathodis ad basi dentium protensis.

Jiangxi (Kiangsi): Jing-Gan-Shan, Ci-Ping to Golden Lion's Face (Jin-Shi-Mian) K. F. Chen (程景福) 730090 (typus), under evengreen forest in ravine, 22, VI, 1973.

Fujian (Fukien): Jien-Ling, Z. Y. Li (李振宇) 10519.

本新种产江西(井岗山, 茨坪至金狮面)、福建(建宁), 形体颇近普通凤丫蕨 *C. intermedia* Hieron. 和凤丫蕨 *C. japonica* (Thunb.) Diels, 不同于前者是植株较大, 羽片边缘锯齿粗而向前伏贴, 叶脉偶而联结成一、二网眼, 小脉顶端的水囊仅达锯齿基部; 不同于后者是羽片多少线状披针形, 叶脉不联成二至三行网眼。可能是二者的杂交种。